Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

DISCUSSION

A New Type of Examination. Just now serious thought is being given to the general intelligence style of examinations in academic subjects and a commission has been appointed by the College Entrance Board to investigate the growing interest in this style of test.

While the chief desire is to reach a more uniform and fair marking system, there is another aspect that perhaps has been overlooked, namely the saving of time in correcting papers. For the past year and a half I have been giving my mathematics classes the so-called plus and minus tests and two noticeable facts have been repeatedly brought out. The first is that the results give in every case just about your personal estimate of the pupil's worth—there are no "surprises." Secondly, while a somewhat longer period is required to make out the examination, the correcting time is materially reduced. This is especially true with large classes. A master copy is placed beside each paper and it is the work of only a few moments to scan down the blanks and check off inaccurate answers.

The number of questions of course will vary with the time of examination and the nature of the subject, but for an hour and a half test sixty-or seventy questions can be given. The papers are run off on a mimeograph and a sheet given to each pupil. All computations are made on another sheet of paper which is collected at the end of the period with the examination sheet.

I have arranged a few specimen questions below:

PART I

In the following place a plus sign in blank if you think it true and a minus sign if false.

1. $x + x + x = x^3$ ....
2. $(a + b)^2 = a^2 + b^2$ ....
3. $(r + s)(r - s) = r^2 - s^2$ ....
4. Eight greater than $4x$ is $8x + 4$ ....
5. k oranges cost 50 cents. One orange costs k times 50 cents. ....
6. If $2x = 1 - x$ then $x = \frac{1}{2}$ ....

7. $m + 2[m - (m + 2m)] = 0$ ....

8. $(a^{-1}b^2)^{\frac{1}{2}} = b\sqrt{a}$ ....

Part II

Fill in the following blanks with correct results.

1. Solve equation for y. $2y - \frac{y}{2} + 5 = y$ ....
2. In formula $F = \frac{5}{9}C + 32$ find value of C. ....
3. In how many places will the graphs of $x + y = 5$ and $xy = 8$ intersect? ....
4. Find third term of $(x + y)^5$ expanded. ....

Part III

In the following questions place a cross in blank beside the expressions which you consider simplified.

1. $\dfrac{a+b}{\sqrt{2}}$ ....
2. $2\sqrt{3} + \sqrt{4}$ ....
3. $2a + \frac{b}{c} + d$ ....
4. $\dfrac{m+n}{\frac{1}{2}k}$ ....

Part IV

In the following problems underline the statement in which the error occurs.

Solve $\begin{cases} x^2 + y^2 = 5 \\ x - y = 1 \end{cases}$

1. $x = (1 + y)$
2. $(1 + y)^2 + y^2 = 5$
3. $y^2 - y + 2 = 0$
4. $y = -2$ or 1

Part V

Fill in blanks with necessary data.

Given the equation $x^5 + 3x^3 - 2x^2 - x + 11 = 0$. This is an equation of the........................degree. The maximum number of positive roots is........................and the maximum number of negative roots is......................... This equation has........................ imaginary roots and..............................real roots.

L. F. Babcock,
Riverdale School, New York City.

Formula for Conjunction Problems. In solving conjunction, clock and race track problems, I have been using a formula which, to my mind, simplifies the work significantly.

I derived the formula in the following way:

Let a = the time of one revolution of the slower body
b = the time of one revolution of the faster
and t = the total time consumed.

The first travels $\frac{t}{a}$ revolutions, while the second travels $\frac{t}{b}$ revolutions. The equation representing the time in which the faster gains a lap on the slower reads,

$$\frac{t}{a} + 1 = \frac{t}{b}$$

Solving for t, we get

$$t = \frac{a - b}{ab} \times \frac{ab}{a - b}$$

For example, Mercury makes a circuit around the sun in 3 months and Venus in $7\frac{1}{2}$ months. Staring in conjunction, how long before they will again be in this position?*

Using the formula:

$$\frac{ab}{a - b}, \text{ we have } \frac{7.5 \times 3}{7.5 - 3} = \frac{22.5}{4.5} = 5 \text{ months.}$$

Again: When, after 12 o'clock, is the first time the hands of a clock are in conjunction?

$$\frac{12 \times 1}{12 - 1} = 1\frac{1}{11} \text{ hours} = 1{:}05\frac{5}{11}$$

Taking a race track problem (Slaught and Lennes): Two automobiles are racing on a circular track. One makes the circuit in 31 minutes and the other in $38\frac{1}{2}$ minutes. In what time will the faster machine gain a lap on the slower?

$$\frac{38.5 \times 31}{38.5 - 31} = \frac{1193.5}{7.5} = 159\frac{2}{15} \text{ min.}$$

PLEASANT HUFFMAN, JR.
Hutsonville (Illinois) Township High School.

---

*Problem taken from Slaught and Lennes.